

In the Claims:

Please amend claims 35, 36, 54 and 57, and add new claims 60-72.

1. (Original) An IV catheter apparatus comprising a tubular catheter having a proximal end and a distal end, a needle having a needle shaft and a tip, said needle being received within said tubular catheter when in a ready position, a catheter hub attached to the proximal end of said catheter, said catheter hub having a hollow interior and an inner wall, said needle being movable between said ready position in which said tip is outside of said catheter hub and a retracted position in which said tip is within the interior of said catheter hub, a unitary needle guard positioned in the interior of said catheter hub and including a resilient portion engaged by said needle shaft when said needle is in its said ready position, a section of said resilient portion of said needle guard being urged by said needle shaft into contact with an interior wall of said catheter hub when said needle is in its said ready position, and an inwardly extending, generally annular protrusion formed on said interior wall of said catheter hub for engaging a segment of said needle guard for retaining said needle guard to said catheter hub during the movement of said needle between its said ready position and its said retracted position, said needle guard including a distal wall extending from said resilient portion and spaced from said needle tip when said needle is in its said ready position and movable within the interior of said catheter hub to a blocking position distal of said needle tip when said needle is in its said retracted position in which said needle shaft no longer exerts a force on said resilient portion of said needle guard such that contact between said section of said needle guard and said catheter hub is released.

2. (Original) The IV catheter apparatus of claim 1, in which said distal wall of said needle guard is contiguous with said resilient portion, said distal wall terminating at a curved lip engaging the underside of said needle shaft when said needle is in its said ready position.

Claims 3 – 11 (withdrawn)

12. (Original) The IV catheter apparatus of claim 1, in which said needle guard further includes an upper end proximal to said resilient portion and in contact with an opposed interior wall of the catheter hub in said ready position.

13. (Original) The IV catheter apparatus of claim 2, in which said needle guard further includes an upper end proximal to said resilient portion and in contact with an opposed interior wall of the catheter hub when said needle is in its said ready position.

Claims 14-21 (withdrawn)

22. (Original) The IV catheter apparatus of claim 1, in which said needle guard further comprises a proximal arm having a lower curved segment in contact with an inner wall of said catheter hub when said needle is in its said ready position.

23. (Original) The IV catheter apparatus of claim 22, in which said proximal arm further includes an upper end in engagement with an opposed location of said inner wall of said catheter hub distal to the point of contact with said lower curved segment when said needle is in its said ready position.

Claim 24 (withdrawn)

25. (Original) The IV catheter apparatus of claim 1, in which said needle guard includes first and second distal walls which overlap one another and form a distal barrier to said needle when said needle guard is in its said blocking position.

26. (Original) The IV catheter apparatus of claim 25, in which said needle guard further comprises a proximal end wall having an opening for receiving said needle therethrough and first and second arms extending respectively between said proximal end wall and said first and second distal walls.

27. (Original) The IV catheter apparatus of claim 26, in which each of said arms includes a wide section hingedly secured to said first and second distal walls and a narrow section extending from said wide section to said end wall.

28. (Original) The IV catheter apparatus of claim 27, in which said needle includes a increased width segment on the needle shaft inward of said needle tip, the width of said increased width segment being greater than that of said opening in said proximal end wall.

29. (Original) The IV catheter apparatus of claim 27, in which said needle guard includes a proximal end wall extending from said resilient portion and including an opening allowing said needle to pass therethrough, said needle further including an increased width segment on the needle shaft inward of said needle tip, the width of said increased width segment being greater than that of said opening in said proximal end wall.

30. (Original) The IV catheter apparatus of claim 29, in which said needle guard further comprises a proximal end wall having an opening for receiving said needle therethrough, said needle further comprising an increased width segment on the needle shaft inward of said needle tip, the width of said increased width segment being greater than that of said opening in said proximal end wall.

Claim 31 (withdrawn)

32. (Original) The IV catheter apparatus of claim 23, in which said needle guard further comprises a proximal end wall having an opening for receiving said needle therethrough, said needle further comprising an increased width segment on the needle shaft inward of said needle tip, the width of said increased width segment being greater than that of said opening in said proximal end wall.

33. (Original) The IV catheter apparatus of claim 32, in which said needle includes a circumferential groove forced inwardly of said tip, said finger being adapted to enter into said groove in the event an axial force is applied to said needle in the proximal direction when said needle guard is in its said blocking position.

34. (Original) An IV catheter apparatus comprising a tubular catheter having a proximal end and a distal end, a needle having a needle shaft and a tip, said needle being received within said tubular

catheter when in a ready position, a catheter hub attached to the proximal end of said catheter, said catheter hub having a hollow interior and an inner wall, said needle being movable between said ready position in which said tip is outside of said catheter hub and a retracted position in which said tip is within the interior of said catheter hub, a unitary needle guard positioned in the interior of said catheter hub and including a resilient portion engaged by said needle shaft when said needle is in its said ready position, a section of said resilient portion of said needle guard being urged by said needle shaft into contact with an interior wall of said catheter hub when said needle is in its said ready position, an inwardly extending, generally annular protrusion formed on said interior wall of said catheter hub for engaging a segment of said needle guard for retaining said needle guard to said catheter hub during the movement of said needle between its said ready position and its said retracted position, said needle guard including a distal wall extending from said resilient portion and spaced from said needle tip when said needle is in its said ready position and movable within the interior of said catheter hub to a blocking position distal of said needle tip when said needle is in its said retracted position in which said needle shaft no longer exerts a force on said resilient portion of said needle guard such that retaining contact between said section of said needle guard and said catheter hub is released.

17 35. (Currently amended): The IV catheter apparatus of claim 34¹⁴ in which said distal wall of said needle guard is contiguous with said resilient portion, said resilient portion including a curved lip engaging the ~~a~~ underside of said needle shaft when said needle is in its said ready position.

B, 18 36. (Currently amended): The IV catheter apparatus of claim 34¹⁶, in which said ~~needle guard~~ further includes resilient portion comprises a transverse arm and a curved upper segment contiguous with said transverse arm and in contact with an opposed interior wall of the catheter hub when said needle is in its said ready position.

37. (Original) The IV catheter apparatus of claim 34, in which said needle guard further comprises a proximal wall having a lower curved segment in contact with said interior wall of said catheter hub when said needle is in its said ready position.

38. (Original) The IV catheter apparatus of claim 37, in which said proximal wall further includes an upper end in engagement with an opposed location of said interior wall of said catheter hub when said needle guard is in its said ready position.

39. (Original) The IV catheter apparatus of claim 34, in which said needle guard includes first and second distal walls which overlap one another and form a distal barrier to said needle when said needle guard is in its said blocking position.

40. (Original) The IV catheter apparatus of claim 39, in which each of said distal walls includes a curved lip engaging opposing surfaces of said needle shaft when said needle is in its said ready position.

41. (Original) The IV catheter apparatus of claim 40, in which said first and second distal walls each further include a wide section and a narrow section extending from said wide section toward said proximal end wall.

42. (Original) The IV catheter apparatus of claim 39, in which said needle guard further comprises a proximal end wall having an opening for receiving said needle therethrough and first and second arms extending respectively between said proximal end wall and said first and second distal walls.

43. (Original) The IV catheter apparatus of claim 42, in which said needle includes an increased width segment on the needle shaft inward of said needle tip, the width of said increased width segment being greater than that of said opening in said proximal end wall.

44. (Original) The IV catheter apparatus of claim 43, in which said first and second distal walls each further include a wide section and a narrow section extending from said wide section toward said proximal end wall.

45. (Original) An IV catheter apparatus comprising a tubular catheter having a proximal end and a distal end, a needle having a needle shaft and a tip, said needle being received within said tubular catheter when in a ready position, catheter hub attached to the proximal end of said catheter, said catheter hub having a hollow interior and an inner wall, said needle being movable between said ready position in which said tip is outside of said catheter hub and a retracted position in which said tip is within the interior of said catheter hub, and a unitary needle guard substantially positioned in the interior of said catheter hub and including a resilient portion engaged by said needle shaft when said needle is in said ready position, a section of said resilient portion of said needle guard being urged by said needle shaft into retaining contact with an inwardly extending, generally annular protrusion formed upon an interior wall of said catheter hub when said needle is in its said ready position, said needle guard also including a distal wall extending from said resilient portion and spaced from said needle tip when said needle is in its said ready position and movable within the interior of said catheter hub to a blocking position distal of said needle tip when said needle is in its said retracted position in which said needle shaft no longer exerts a force on said resilient portion of said needle guard such that said retaining contact between said section of said needle guard and said catheter hub is released upon the movement of said needle guard to its said blocking position.

46. (Original) The IV catheter apparatus of claim 45, in which said needle guard includes first and second distal walls which overlap one another and form a distal barrier to said needle when said needle guard is in its blocking position.

47. (Original) The IV catheter apparatus of claim 46, in which said first and second distal walls include a wide section and a narrow section extending from said wide section toward said proximal end wall.

48. (Original) The IV catheter apparatus of claim 47, in which said needle guard further comprises a proximal end wall having an opening for receiving said needle therethrough and first and second arms extending respectively between said proximal end wall and said first and second distal walls.

49. (Original) The IV catheter apparatus of claim 48, in which said needle includes an increased width segment on the needle shaft inward of said needle tip, the width of said increased width segment being greater than that of said opening in said proximal end wall.

50. (Previously added): A catheter device comprising at least two components that are separable from one another, the first component comprises a catheter hub and a catheter tube fixedly secured thereto; and the second component comprises a needle hub and a needle fixedly secured thereto; wherein the needle comprises a needle tip, a large diameter segment, and a needle shaft, and the catheter tube comprises a catheter passage; and wherein the catheter hub and the needle hub further comprise:

a catheter hub distal end and a catheter hub proximal end, the catheter hub distal end having the catheter tube extending therefrom;

a catheter hub opening, the catheter hub opening defining a catheter hub annular space;

a needle hub distal end and a needle hub proximal end, the needle hub distal end having the needle extending therefrom;

a needle protector clip having a resilient biasing portion; wherein when the needle is in the ready position, which is the position in which the needle projects into the catheter passage and the needle tip extends beyond the catheter tube; the needle protector clip is disposed over the needle and is located within the catheter hub annular space but spaced apart from the needle hub distal end; and wherein when the needle is in a fully retracted position, which is the position in which the needle protector clip moves relative to the needle until the needle is completely withdrawn from the catheter hub annular space, the needle protector clip is activated and attaches to the needle at the needle tip and the large diameter segment; and

wherein the resilient biasing portion has a first position and a second position, the first position is characterized by the resilient biasing portion abutting the needle shaft and the second position is characterized by the resilient biasing portion shielding the needle tip and preventing accidental contact with the needle tip.

51. (Previously added): The catheter device of claim 50, wherein the needle protector clip further comprises a protector clip proximal end and a protector clip distal end, and wherein the protector

clip is secured to the needle tip when the needle is in the fully retracted position by a portion of the protector clip proximal end making contact with the large diameter segment and a portion of the protector clip distal end shielding the needle tip.

52. (Previously added): The catheter device of claim 50, further comprising a needle protector clip outer contact surface, and wherein the needle protector clip is secured to the catheter hub annular space by frictionally engaging the needle protector clip outer contact surface with a surface located within the catheter hub annular space; the needle protector clip is configured to separate from the catheter hub annular space when the frictional engagement is removed.

53. (Previously added): The catheter device of claim 50, wherein the large diameter segment is a crimp.

54. (Currently amended): A catheter device comprising:
a needle hub having a needle hub proximal end and a needle hub distal end; the needle hub distal end is secured to a needle at the needle's proximal end, the needle has a needle tip, a needle shaft, and a needle crimp disposed proximal of the needle tip;

a catheter hub having a catheter hub proximal end and a catheter hub distal end; the catheter hub distal end is secured to a catheter tube at the catheter tube's proximal end;

the catheter tube has an opening at a catheter tube distal end and the catheter tube proximal end, and a catheter tube annular space defined between the two openings;

wherein the needle and the crimp are disposed within the catheter tube annular space and the needle tip extends beyond the annular space when the needle is in a ready position; and

a needle protector for shielding the needle tip and preventing accidental contact with the needle tip when the needle is in a fully retracted position, the needle protector is located adjacent to but spaced apart from the needle hub distal end when the needle is in the ready position, the needle protector comprising an opening for allowing the needle to slide from between the needle ready position and the needle fully retracted position, the needle protector further comprising a protector arm and a protector arm first position and second position, the protector arm first position is a position in which the protector

arm is in a flexed state and contacts the needle shaft and the protector arm second position is a position in which the protector arm is in a relaxed state and the needle protector is shielding the needle tip and preventing accidental contact with the needle tip.

55. (Previously added): The catheter device of claim 54, wherein the needle protector clip further comprises a protector clip proximal end and a protector clip distal end, wherein the protector clip is secured to the needle tip when the needle is in the fully retracted position by a portion of the protector clip proximal end making contact with the needle crimp and a portion of the protector clip distal end shielding the needle tip.

56. (Previously added): The catheter device of claim 54, further comprising a needle protector clip outer contact surface, and wherein the needle protector clip is secured to the catheter hub annular space by frictionally engaging the needle protector clip outer contact surface with a surface located within the catheter hub annular space; the needle protector clip is configured to separate from the catheter hub annular space when the frictional engagement is removed.

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57. (Currently amended): An IV catheter apparatus comprising a tubular catheter having a proximal end and a distal end, a needle having a needle shaft and a tip and wherein the needle is attached to a distal end of a needle hub, said needle being received within said tubular catheter when the needle is in a ready position, a catheter hub attached to the proximal end of said catheter, said catheter hub having a hollow interior and an inner wall, said needle being movable between said ready position in which said tip is outside of said catheter hub and a retracted position in which said tip is within the interior of said catheter hub, a needle guard positioned in the interior of said catheter hub ~~and including~~ a spaced apart relationship from the distal end of the needle hub; and wherein the needle guard comprises a resilient portion engaged by said needle shaft when said needle is in its ready position, the needle guard resilient portion is movable within the interior of said catheter hub to a blocking position distal of said needle tip when said needle is in its retracted position in which said needle shaft no longer exerts a force on said resilient portion of said needle guard.

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40 58. (Previously added): The IV catheter apparatus of claim 57, wherein the needle guard further comprises a needle guard proximal end, wherein the needle guard is secured to the needle tip when the needle is in the fully retracted position by a portion of the needle guard proximal end making contact with a needle crimp and the resilient portion blocking the needle tip. 39

41 59. (Previously added): The IV catheter apparatus of claim 57, further comprising a needle guard outer contact surface, and wherein the needle guard is secured to the catheter hub hollow cylinder by frictionally engaging the needle guard outer contact surface with the inner wall of the hollow cylinder; the needle guard is configured to separate from the hollow cylinder when the frictional engagement is removed. 39

42 60. (New) A combination needle and needle guard having a ready position and a retracted position comprising:

a needle hub mechanically coupled to the needle having a needle tip, the needle hub comprising an open proximal end, an interior cavity, and a closed distal end, wherein the needle is attached to the distal end and is in communication with the interior cavity and projects distally away from the needle hub;

B3 a unitary needle guard positioned on and coaxial with the needle, the unitary needle guard comprising an end wall having an end wall opening and having the needle passing therethrough, a resilient portion extending from the end wall and having a distal wall at the end thereof, the distal wall and the resilient portion defining an intersection therebetween that comprises a curved protrusion, wherein a portion of the distal wall is adapted to contact a side of the needle and urges the resilient portion radially outwardly from the needle when the combination needle and needle guard is in the ready position;

an outer hub comprising a housing comprising a proximal end having a proximal end opening, a distal end having a distal end opening, a hub exterior surface and a hub interior cavity; the hub interior cavity comprising an interior surface that includes a projection, wherein the interior cavity defines a first larger diameter and the projection defines a second smaller diameter;

the combination needle and needle guard is configured such that when the combination is in the

ready position, the needle guard is positioned within the hub interior cavity and the needle and needle guard are coaxially disposed, the curved protrusion at the intersection between the distal wall and the resilient portion is positioned distal of the interior surface projection, the needle guard is positioned adjacent the closed distal end of the needle hub, and the outer hub proximal end is adjacent the closed distal end of the needle hub; and

the combination needle and needle guard is configured such that in transitioning between the ready position and the retracted position, the outer hub moves distally relative to the needle, whereby the interior surface projection contacts the curved protrusion of the needle guard thereby moving the needle guard distally until the needle guard distal wall moves past the needle tip, whereupon the resilient portion snaps radially inwardly to guard the needle tip, the curved protrusion disengages from the interior surface projection, and the outer hub separates from the needle guard and the needle.

43 61. (New) The combination needle and needle guard of claim 60, wherein the outer hub proximal end is engaged to the closed distal end of the needle hub.

B3 *44* 62. (New) The combination needle and needle guard of claim 60, further comprising a needle crimp located proximally of the needle tip, wherein the end wall opening of the unitary needle guard contacts the needle crimp when the combination needle and needle guard is in the retracted position.

45 63. (New) The combination needle and needle guard of claim 60, wherein the distal wall of the unitary needle guard further comprises a curved lip portion, and wherein the curved lip portion contacts the side of the needle to urge the resilient portion radially outwardly from the needle.

46 64. (New) The combination needle and needle guard of claim 60, further comprising a catheter tube attached to the distal end opening of the outer hub.

47 65. (New) The combination needle and needle guard of claim 60, wherein the end wall of the unitary needle guard is in a spaced apart configuration from the closed distal end of the needle hub.

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66 (New) An IV catheter assembly having a ready position and a retracted position comprising:

a needle hub mechanically coupled to the needle having a needle tip, the needle hub comprising an open proximal end, an interior cavity, and a closed distal end, wherein the needle is attached to the closed distal end and is in communication with the interior cavity and projects distally away from the needle hub;

a unitary needle guard positioned on and coaxial with the needle, the unitary needle guard comprising an end wall having an end wall opening and having the needle passing therethrough, a resilient portion extending from the end wall and having a distal wall at the end thereof, the distal wall and the resilient portion defining an intersection therebetween that comprises a curved protrusion, wherein a portion of the distal wall contacts a side of the needle and urges a portion of the resilient portion radially outwardly from the needle when the combination needle and needle guard is in the ready position;

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B3 an outer hub comprising a housing comprising a proximal end having a proximal end opening, a distal end having a distal end opening, a hub exterior surface and a hub interior cavity; the hub interior cavity comprising an interior surface that includes a projection, wherein the interior cavity defines a first larger diameter and the projection defines a second smaller diameter;

wherein when the combination needle and needle guard is in the ready position, the needle guard is positioned within the hub interior cavity and the needle and needle guard are coaxially disposed, the curved protrusion at the intersection between the distal wall and the resilient portion is positioned distal of the interior surface projection, the needle guard is positioned adjacent the closed distal end of the needle hub, and the outer hub proximal end is adjacent the closed distal end of the needle hub; and

wherein when the combination needle and needle guard transitions between the ready position and the retracted position, the outer hub moves distally relative to the needle, whereby the interior surface projection contacts the curved protrusion of the needle guard thereby moving the needle guard distally until the needle guard distal wall moves past the needle tip, whereupon the resilient portion snaps radially inwardly to guard the needle tip, the curved protrusion disengages from the interior surface projection, and the outer hub separates from the needle guard and the needle.

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49/ 67. (New) The IV catheter assembly of claim 66, wherein the outer hub proximal end is engaged to the closed distal end of the needle hub.

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50/ 68. (New) The IV catheter assembly of claim 66, further comprising a needle crimp located proximally of the needle tip, wherein the end wall opening of the unitary needle guard contacts the needle crimp when the combination needle and needle guard is in the retracted position.

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51/ 69. (New) The IV catheter assembly of claim 66, wherein the distal wall of the unitary needle guard further comprises a curved lip portion, and wherein the curved lip portion contacts the side of the needle to urge the resilient portion radially outwardly from the needle.

B3 52/ 70. (New) The IV catheter assembly of claim 66, further comprising a catheter tube attached to the distal end opening of the outer hub.

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53/ 71. (New) The IV catheter assembly of claim 66, wherein the end wall of the unitary needle guard is in a spaced apart configuration from the closed distal end of the needle hub.

72. (New) The IV catheter apparatus of claim 2, wherein the needle guard further includes an upper end contiguous with the transverse segment and proximal to the resilient portion and in contact with an opposed interior wall of the catheter hub when the needle is in the ready position.